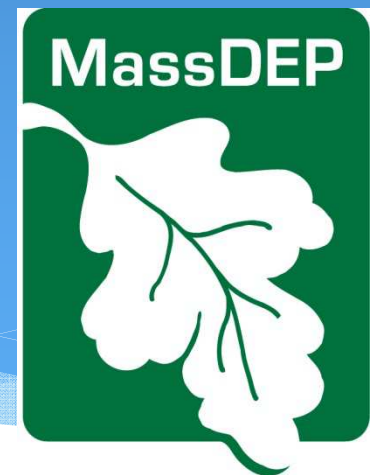


# The Volkswagen Settlement and Development of the Massachusetts Beneficiary Mitigation Plan

Massachusetts Department of  
Environmental Protection

February 2018



# Agenda

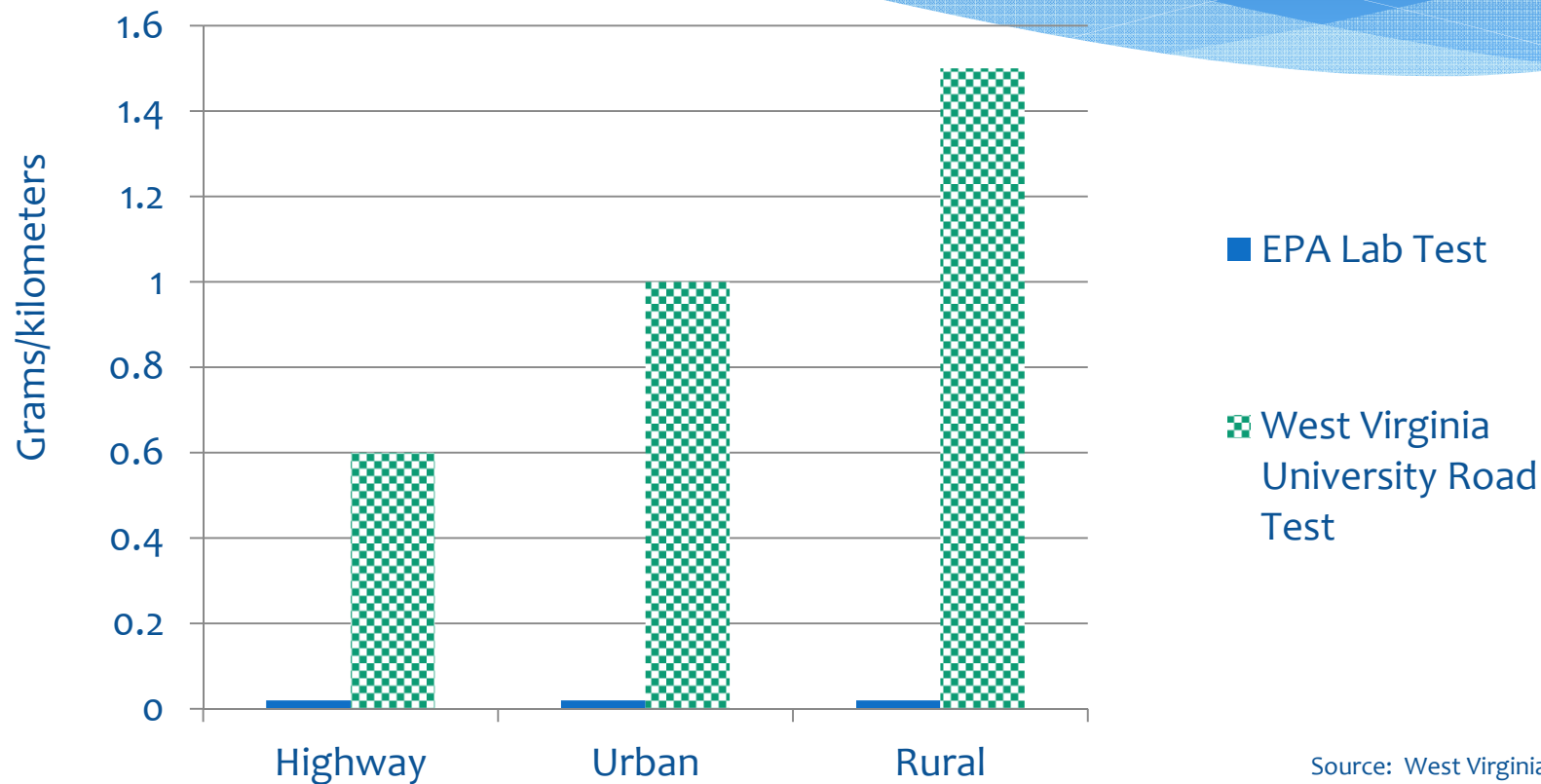
- ❑ Background
- ❑ NOx Impact and MA Emission Inventory
- ❑ Beneficiary Mitigation Plan (BMP)
- ❑ Eligible Mitigation Actions (EMAs)
- ❑ Inventory of MA Diesel Engines & MassDEP Projects
- ❑ Massachusetts' Interests
- ❑ Stakeholder Input
- ❑ Next Steps



# VW's Violations

- 2004** Phase in of stronger emission standards for nitrogen oxides (NOx) begins
- 2009** VW begins installing defeat devices on diesel vehicles for next seven model years
- 2014** Researchers find “**significantly higher** in-use emissions” than certified levels for 2012 Jetta TDI
- 2015** VW admits altering vehicles

# 2014 VW Jetta Test Results (NOx Emissions)



Source: West Virginia University

# Affected Vehicles

- **11 million vehicles worldwide**
- **590,000 2.0 & 3.0 liter engines in US**
- **MY 2009 – 2016**
- **Owned and leased**
- **14,000+ in MA**



Audi



PORSCHE



# VW Settlement Terms



# MA's Share & Obligations

- ✓ \$75 million from VW Settlement held in Trust
- ✓ Spend \$ on variety of projects that reduce NOx
- ✓ Develop Beneficiary Mitigation Plan (BMP)

A logo consisting of the letters "BMP" in a bold, green, sans-serif font. The letters are enclosed within a white rectangular box with rounded corners and a dark blue border.

# Effects of Excess NOx Emissions

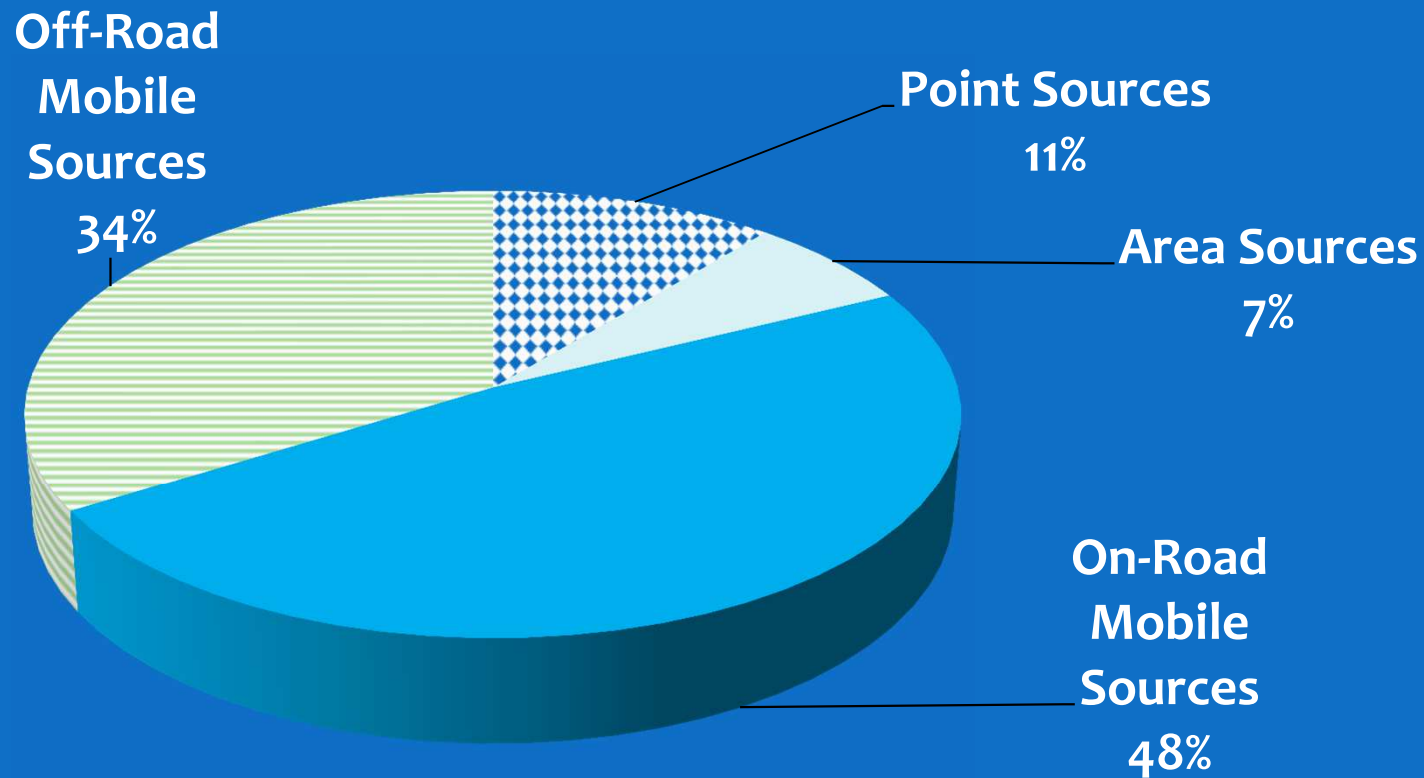
## NOx—

- \* Helps form ground level ozone and fine particulate matter (PM) – linked to **respiratory & cardiovascular problems**
- \* Aggravates respiratory diseases
- \* Contributes to **global warming, acid rain & nutrient overloading** in waterways





# MA NO<sub>x</sub> 2011 Summer Day Emissions (385 Tons Per Day)



Source: MassDEP

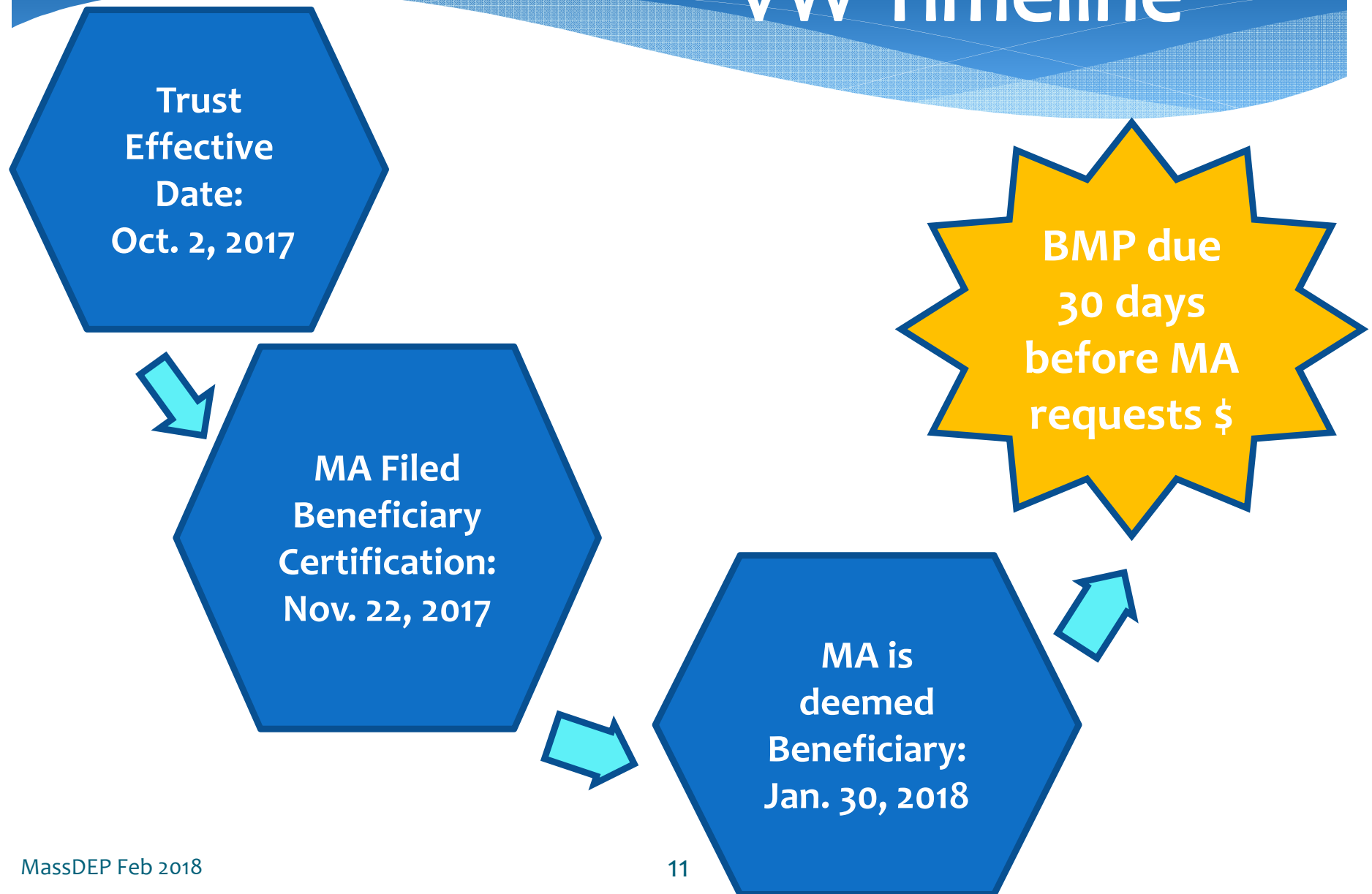
# Beneficiary Mitigation Plan



## **MA BMP must cover:**

- ✓ Overall goal for use of funds
- ✓ Categories of planned Eligible Mitigation Actions (EMAs) (see Appendix D-2)
- ✓ Range of expected NO<sub>x</sub> emissions reductions
- ✓ Impact of EMAs on air quality in MA areas bearing disproportionate share of air pollution
- ✓ Public input process

# VW Timeline



# Funding Timeline Possibilities

- ✓ 10 years to spend 80% of funding (\$60 m) + another five years to spend remaining 20% (\$15 m)
- ✓ Option to spend 1/3 of funding (\$25 million) in 1<sup>st</sup> year & up to 2/3 in first two years (\$50 million)



# Eligible Mitigation Actions (EMAs)

1. Large Freight & Port Drayage Trucks
2. School/Shuttle/Transit Buses
3. Freight Switchers
4. Ferries/Tugboats
5. Shore Power for Ocean Going Vessels (OGV)
6. Medium Local Freight Trucks
7. Airport Ground Support Equipment (GSE)
8. Forklifts & Port Cargo Handling Equipment (CHE)
9. Light Duty Zero Emission Vehicle Supply Equipment (EVSE)
10. Diesel Emissions Reduction Act (DERA) Option

Appendix D-2: <https://www.vwcourtsettlement.com/wp-content/uploads/documents/DOJ/Approved%20Appendix%20D-2.pdf>

# Technology Options

- \* Repower w/new diesel, alternate fueled (AF) or electric engine
- \* Replace w/new diesel, AF or all electric vehicle/equipment
- \* Shore power alone (for ocean going vessels only)



## Alternate Fueled Vehicle

Vehicle that uses fuel different from or in addition to gas or diesel

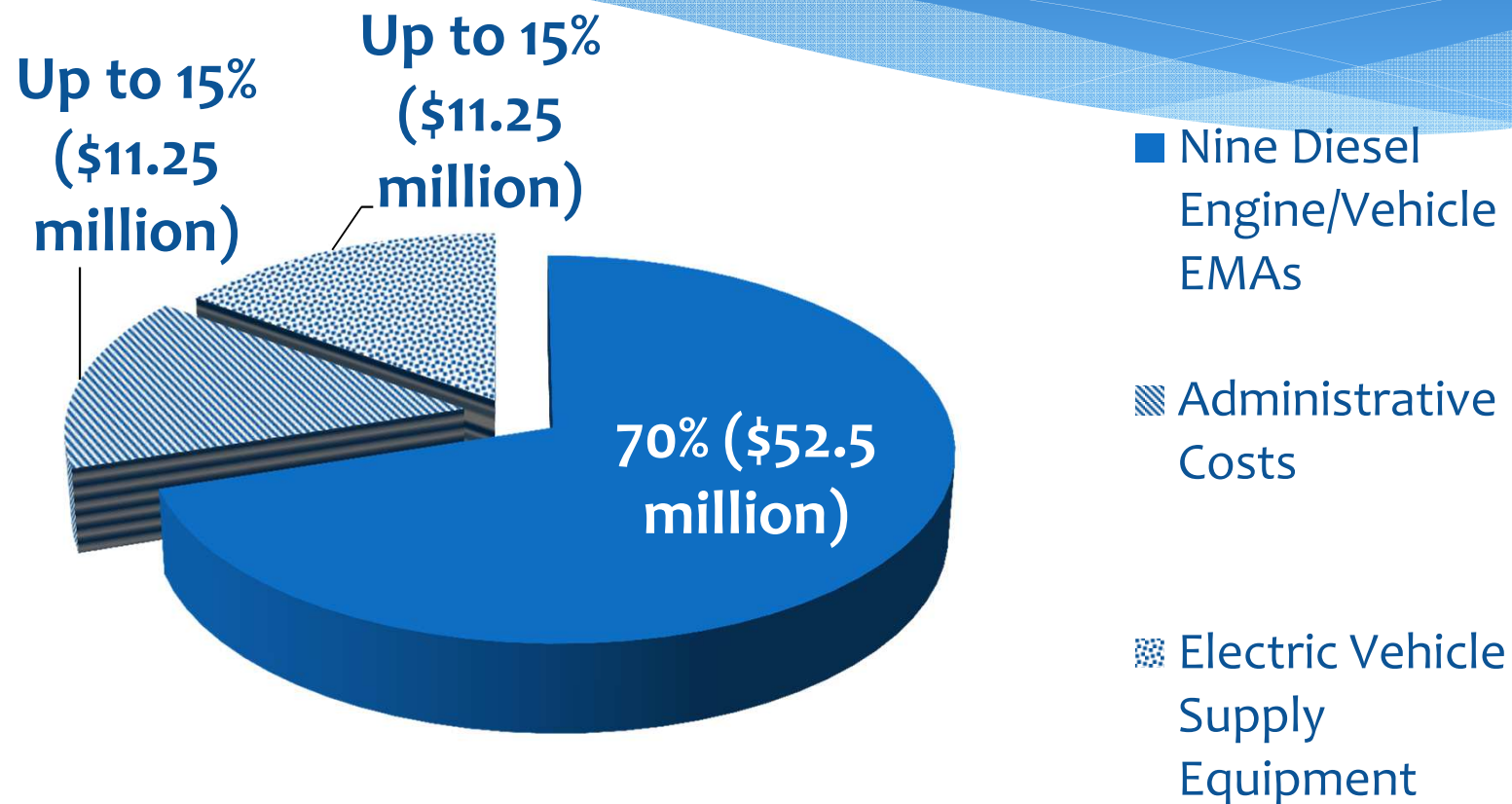
*Examples: CNG, propane, diesel electric hybrid*



# Funding

- Government owned: up to 100% funded
- Non-government owned: varies
- Agency discretion
- Repower or replace w/new diesel or AF engine/vehicle/equipment: \$ covers purchase & installation of engine
- Repower or replace w/all-electric engine/vehicle/equipment: \$ covers purchase & install of engine and charging infrastructure (CI)

# Funding Categories





# Scrappage Requirements

- \* All EMAs except OGV shore power & EVSE
- \* Drill 3-inch hole in engine block
- \* Dispose of hazardous liquids in compliance w/ local, state, federal regulations
- \* If replacing vehicle or equipment, disable chassis



Source: MassDEP

# #1. Large Local Freight & Port Drayage Trucks

## Eligible Engines/Vehicles:

- ✓ MY 1992-2009 engines
- ✓ 33,001 lbs. or more GVWR (Class 8)
- ✓ Operate in MA

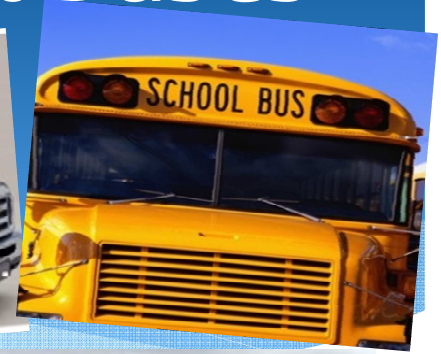


Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new diesel or AF engine	100%	40%
Replace w/new diesel or AF vehicle	100%	25% (50% for drayage)
Repower w/new all-electric engine & CI	100%	75%
Replace w/new all-electric vehicle & CI	100%	75%

## #2. School, Shuttle and Transit Buses

### Eligible Engines/Vehicles:

- ✓ MY 2009 or older engines
- ✓ 14,001 lbs.+ (Class 4-8)
- ✓ Gov't. includes school buses contracting w/public school district



Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new diesel or AF engine	100%	40%
Replace w/new diesel or AF vehicle	100%	25%
Repower w/new all-electric engine & CI	100%	75%
Replace w/new all-electric vehicle & CI	100%	75%

# #3. Freight Switchers

## Eligible Switchers:

- ✓ Pre-Tier 4 engines (MY 2014 & older)
- ✓ Operate  $\geq 1,000$  hrs./year



Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new diesel or AF engine or Gen Set	100%	40%
Replace w/new diesel or AF switcher or Gen Set	100%	25%
Repower w/new all-electric engine or Gen Set, & CI	100%	75%
Replace w/new all-electric switcher, including Gen Set, & CI	100%	75%



## #4. Ferries and Tugs

### Eligible Engines:

- ✓ Unregulated, Tier 1 and Tier 2 marine engines



Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new Tier 3 or 4 diesel or AF engine	100%	40%
Repower w/new all-electric engine & CI	100%	75%

## #5. Shore Power for Ocean Going Vessels

### Eligible Systems Must:

- ✓ Comply w/international shore power design standards
- ✓ Source power from local grid



Technology Option	Maximum Funding %	
	<i>Gov't</i>	<i>Non-Gov't</i>
Shore-side power system	100%	25%

## #6. Medium Local Freight Trucks

### Eligible Engines/Vehicles:

- ✓ MY 1992-2009 engines
- ✓ 14,001 – 33,000 lbs. (Classes 4-7)
- ✓ Operate in MA



Technology Options	Maximum Funding %	
	<i>Gov't</i>	<i>Non-Gov't</i>
Repower w/new diesel or AF engine	100%	40%
Replace w/new diesel or AF vehicle	100%	25%
Repower w/new all-electric engine & CI	100%	75%
Replace w/new all-electric vehicle & CI	100%	75%

# #7. Airport Ground Support Equipment (GSE)

## Eligible Engines/Equipment:

- ✓ Tier 0, Tier, 1 or Tier 2 diesel engines
- ✓ Uncertified, or certified to  $\geq 3$  g/bhp-hr, spark ignition engines



Technology Options	Maximum Funding %	
	<i>Gov't</i>	<i>Non-Gov't</i>
Repower w/new all-electric engine & CI	100%	75%
Replace w/new all-electric equipment & CI	100%	75%



# #8. Forklifts and Port Cargo Handling Equipment (CHE)

## Eligible Engines/Equipment:

- ✓ >8,000 lb. lift capacity forklifts and CHE
- ✓ CHE operate at ports



Technology Options	Maximum Funding %	
	Gov't	Non-Gov't
Repower w/new all-electric engine & CI	100%	75%
Replace w/new all-electric equipment & CI	100%	75%

## #10. Diesel Emissions Reduction Act (DERA) Option

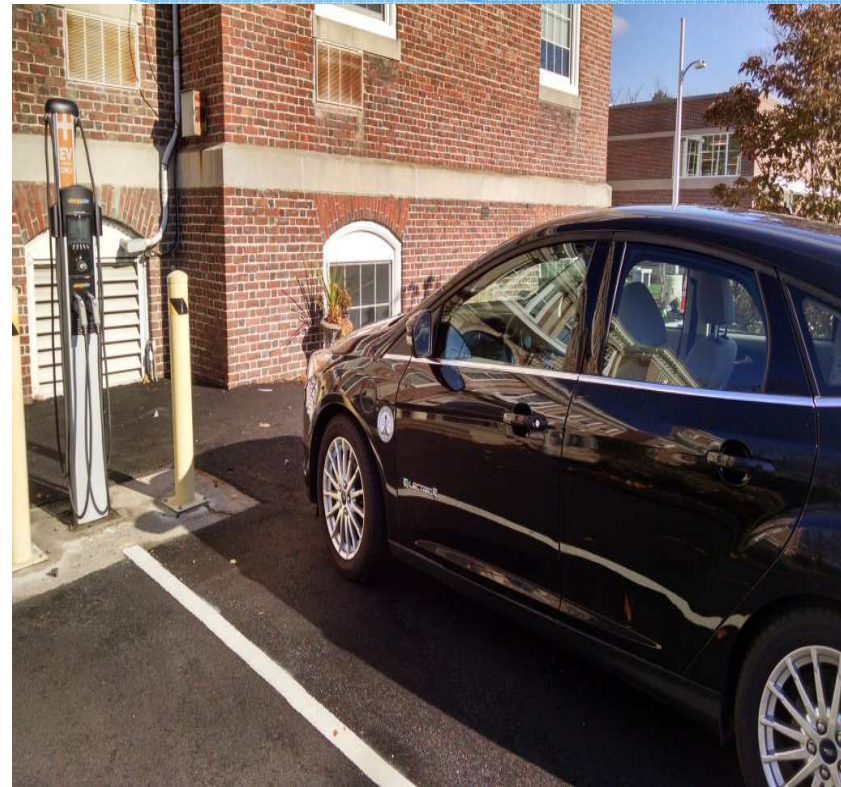
- Use \$ for projects not allowed by VW but eligible under DERA

Examples: Repowers, replacements, retrofits, verified idle reduction, low resistance tires, engine upgrades & other technologies

- See Environmental Protection Agency (EPA) webpage:  
<https://www.epa.gov/sites/production/files/2017-01/documents/vw-dera-option-eligible-mitig-compar-2017-01.pdf>

## #9. Light-Duty Zero Emission Vehicle Supply Equipment (EVSE)

- ✓ Level 1, Level 2 or Fast Charging EVSE in public place, workplace or multi-unit dwelling (MUD)
- ✓ Light-duty hydrogen fuel cell EVSE



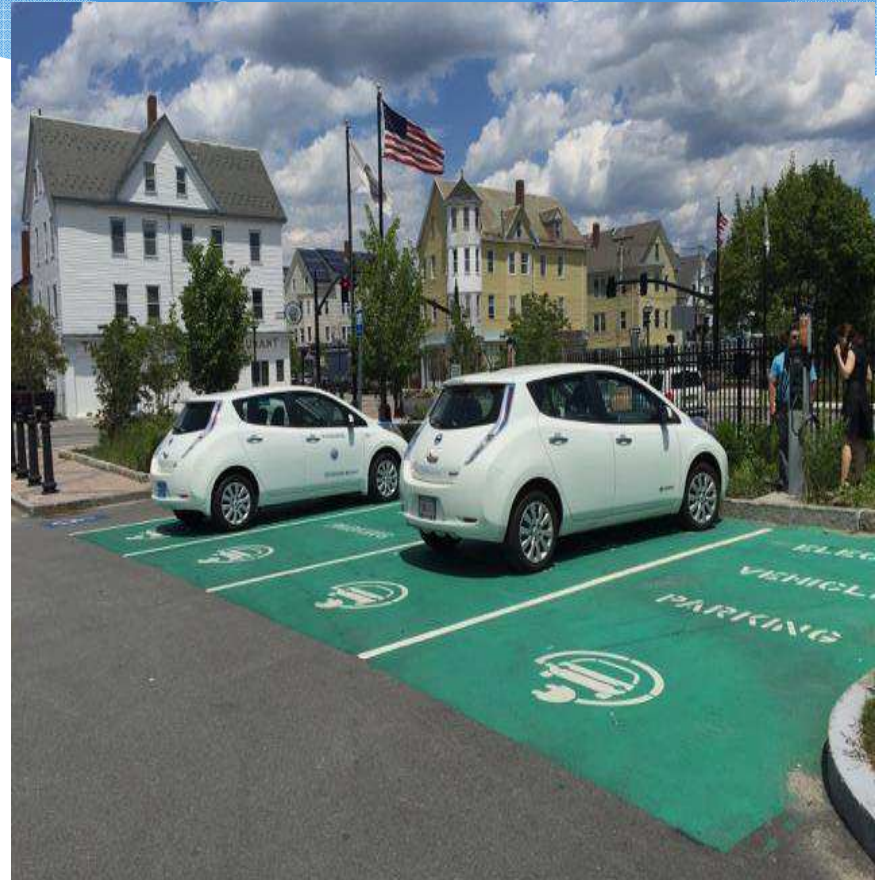
Source: MassDEP

# Zero Emission EVSE

Technology Options	Maximum Funding %
<b>EVSE</b>	
- Public use at gov't owned property	100%
- Public use at non-gov't property	80%
- At workplace but not for public use	60%
- At multi-unit dwelling but not for public use	60%
<b>Hydrogen Fuel Cell EVSE</b>	
- Public use & dispenses 250 kg/day	33%
- Public use & dispenses 100 kg/day	25%

# Current MA EVSE Projects

- 1) MassDEP Electric Vehicle Incentive Program (MassEVIP)
  - 480 private charging stations
  - 82 public charging stations
  - 311 street addresses
  
- 2) Mass Dept. of Transportation (MassDOT)
  - Installed 6 DCFCs on Mass Pike

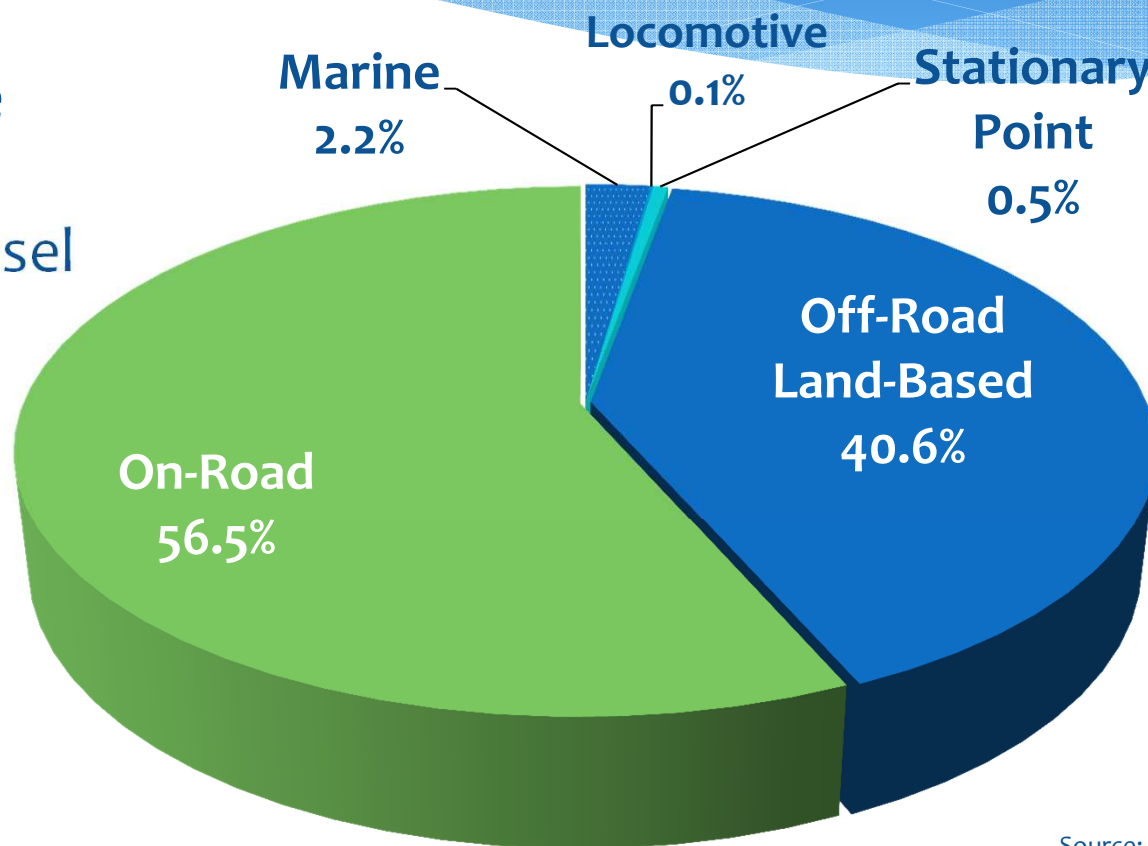


Source: MassDEP



# MA-Registered Diesel Engines in 2016 (258,352)

Based on the  
most recent  
MassDEP Diesel  
Emissions  
Inventory



Source: MassDEP

# Past MassDEP Replacement Projects



Source: MassDEP

- AF Vehicle Replacements
- Replaced 11 diesel trucks w/diesel-hybrid trucks for \$401K
- Scrapped old vehicles

# Past MassDEP Repower Projects

New engines in 18 MBTA  
Head End Power (HEPs)  
units for \$1.75 m



Source: MassDEP

Repowered 1 construction  
engine for \$21K



Source: MassDEP



# Massachusetts' Interests

- Consider all EMAs
- Use up to 15% of \$ to develop EV-charging infrastructure to promote electric vehicles
- Use up to 15% for administrative costs if paired w/EMA
- Fund projects that “electrify” transportation system
- Focus on areas serving Environmental Justice (EJ) populations
- Geographic distribution

# Next Steps

## \* Hold additional stakeholder meetings

MassDEP Southeastern Office, Jan. 29, 1-3 pm

Brockton Public Library, Brockton, Jan. 29, 5:30-7:30 pm

Holyoke Community College, Holyoke: Feb. 7, 2-4 pm & 5:30-7:30 pm

DEP Northeast Office, Wilmington: Feb. 12, 1-3 pm

UMass Lowell Recreation Center, Lowell: Feb. 12, 6-8 pm

MassDEP Headquarters, Boston: Feb. 15, 1-3 pm & 6-8 pm

MassDEP Central Office, Worcester: Feb. 27, 1-3 pm & 6-8 pm

# Next Steps (Cont.)

- Issue Request for Information (RFI)
- Submit BMP to Wilmington Trust
- **SUBMIT COMMENTS/PROPOSALS TO:**
  - 1) MassDEP's webpage at:  
<https://www.mass.gov/guides/volkswagen-diesel-settlements-environmental-mitigation>
  - OR
  - 2) [vw.settlement@state.ma.us](mailto:vw.settlement@state.ma.us)

# Contacts

**Susan Lyon**

MassDEP

One Winter St., 6<sup>th</sup> Floor, Boston, MA 02108

[susan.lyon@state.ma.us](mailto:susan.lyon@state.ma.us)

617-556-1101

**Sharon Weber**

MassDEP

One Winter St., 6<sup>th</sup> Floor, Boston, MA 02108

[sharon.weber@state.ma.us](mailto:sharon.weber@state.ma.us)

617-556-1190